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BABIES' SORE EYES.

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THE accoucheur has scarcely begun to congratulate himself on the favorable progress of his case after delivery, when, in many instances, the appearance of ophthalmia in the new-born infant renews his anxieties. The suddenness of the attack, the severity of the symptoms, the delicate state of the mother and child, — making it impossible, in most cases, to have other advice than that of the attending physician, — and the immediate and obvious consequences of his skill or of the want of it; these conditions combine to render such cases of grave importance.

From some cause, this disease has seemed to be more than usually frequent and virulent during the last summer and autumn, and I have been urged to say something in the JOURNAL about it and its management.

No case should be neglected, when there is even a slight discharge from the eyes of young infants; a mild form of conjunctivitis, however, is often met with, marked by slight redness of the lining of the lids and a little mucous secretion, which requires only frequent cleansing of the eyes with tepid water, and the use of simple ointment along the edges of the lids to prevent their adhesion at night; or, at most, the putting into the eyes, three times a day, a few drops of a solution of two grains of alum or four grains of borax in an ounce of water. These are the cases in which nurses think they accomplish such wonders by spirting into the eyes a stream of breast-milk: a waste of valuable material, but a procedure which does no other harm than to render the nurses self-confident, and to lead them to fatal reliance on the same means in cases of the more severe form of disease. This mild inflammation is apparently often caused by strong soap, or other acrid or irritating substances, rubbed into the eyes at the first cleansing of the child; cold and dampness are also causes. The same agencies *may* sometimes induce the more virulent disease which is the subject of this paper; but it is probably most often due to infection of the eyes, during birth, from vaginal or urethral secretions. This is made probable by the limitation of the time within which the first symptoms appear; for if the severer form of disease were often produced by the action of external irritants,

it would show itself at various periods, as a result of the continued carelessness of mothers and nurses, whereas it seldom begins later than ten days after birth, usually much sooner.

The form of purulent conjunctivitis known as ophthalmia neonatorum, or ophthalmia of new-born infants, generally begins from the third to the sixth day after birth, a slight red streak on the skin along the middle of the upper lid being sometimes observed as a premonitory symptom before any discharge from the eyes is noticed. If the lid is drawn open, its lining is seen to be red and velvety, and a slight mucous secretion is found. In a few hours the lids may become enormously swollen and livid, the upper lid sometimes completely overlapping the lower and resting upon the cheek. The conjunctiva lining the lid becomes greatly tumefied and its surface granulated, and inspection of the eye becomes impossible without the aid of an elevator. When by the help of this instrument the eye is seen, the conjunctiva of the eye-ball is found to be in a condition similar to that of the inside of the lids. The secretion from the conjunctiva rapidly assumes a purulent character, and the quantity is very large, a teaspoonful perhaps accumulating in an hour's time. If this condition is not soon changed for the better, the defective nutrition, the pressure of the swollen lids, and maceration in the unhealthy secretion cause haziness of the cornea, and then ulceration and perforation; followed usually by hernia of the iris and perhaps loss of vision.

Two opposite and equally fatal errors of treatment are unhappily prevalent. On the one hand, nurses frequently regard babies' sore eyes as a slight matter, and neglect to call the attention of the physician to the early symptoms, relying on the breast-milk as an infallible cure. Then, when the increased swelling of the lids makes the use of this means impossible, they are too often ready to apply an alum curd or a poultice, "to draw the inflammation," thus greatly increasing the danger of ulceration or sloughing of the cornea. On the other hand, the physician, unfamiliar with these cases, and alarmed at the intensity and duration of the symptoms, feels that the latter must be subdued by active treatment, and may employ caustics or stimulants adapted to disease of the same tissues in adults, but not well borne by the infantile subject.

Of all curative means the *most important is constant cleansing of the eyes.* This should be repeated according to the amount of the discharge, every two hours, every hour, or even every half-hour during the day, and once or twice at least at night, until the diminished secretion and lessened thickness of the lids allow of a less frequent repetition. The lids may be opened with the fingers of both hands by the nurse, whilst another person pours in tepid water from a spoon or sponge. If the lids are greatly swollen this becomes impossible, and a syringe must be used,

which should be perfectly clean, and have a smooth and not too sharp point. Its nozzle is to be gently passed under the edge of the upper lid, and the contents injected so as thoroughly to wash out the palpebral cavity. This must be done often, as already advised, for it must be borne in mind that the continuous soaking of the cornea in the copious purulent discharge seems to soften its texture and prepare the way for ulceration. Special care should be taken, in cold weather, to make the water so warm that the child may have no shock, and thus to avoid its crying, as the thickened lids are often everted when the child cries. Should this eversion occur, the lids are to be replaced as gently as possible with the fingers. A little simple ointment should be used along the edges of the lids, when the child sleeps, to prevent agglutination and give opportunity for the free escape of the discharges; as also to protect the external skin from excoriation.

If these means are gently used, the child is not much disturbed, and soon falls asleep after them. These measures for securing cleanliness appear to be sufficient for the cure of many even severe cases; but I think it safer, where the symptoms are formidable, to alternate with the injections of water the use of a mild astringent, as, for instance, a solution of five grains of alum in an ounce of water. This should be applied in the same way, and should be warmed if necessary. A solution of crystals of borax, of the same strength, may also be used. These are the best collyria for these cases; but a solution of sulphate of zinc, a fourth or a half of a grain in an ounce of water, may sometimes be serviceable. Any *strong* astringent solutions, or *any* solutions of nitrate of silver, acetate of lead, or corrosive sublimate; the introduction beneath the lids of mercurial or nitrate of silver ointments; the application of the crayon of nitrate of silver, pure or mitigated with nitrate of potash, or of the crayon of sulphate of copper: all these *should be avoided.* Cases may perhaps do well where these have been employed, especially if great care has at the same time been taken as regards cleanliness of the eyes; but they are dangerous remedies. Moreover, they sometimes evidently cause agonizing pain; and there is great risk that the mother, unable to bear the dreadful sight of her infant's sufferings, may refuse, unless the physician has established the strongest hold upon her confidence, to continue so harsh a treatment, and may place the child probably in less skillful hands, though blaming the doctor if the eyes are lost.

The condition of the cornea must be closely watched, and the lids must be raised for this purpose, by means of an elevator. If unprovided with such an instrument, the physician may form one by bending the end of the handle of a spoon, with which he can draw up the lid; or he may perhaps effect his object by using a broad hair-pin, bending the rounded end in the same way. Any central cloudiness or ulceration of the cornea would indicate the use of a drop of a solution of sulphate of

atropia, two grains to an ounce of water, put into the eye once daily, or oftener, and continued while any cloudiness remains. Should perforation of the cornea take place, hernia of the iris may perhaps be prevented by its use, and if the opening is small and is promptly healed, good vision may be preserved. The physician should not relax his vigilance until the symptoms are much improved, as the cornea sometimes yields unexpectedly, under the effects of the long continuance of the disease, even in its later stages and after its force is apparently spent.

Every pains should be taken to secure good nutrition for the child. Without exposing it to cold, the air of the room should be renewed. The light should be moderated, so that the child may open its lids when they are not too much swollen, and thus permit the discharge of the secretions. The child will not open its eyes if the room is too light or too dark.

The prognosis of this affection is favorable, even in the severest cases, if treated promptly and diligently from the outset; and I once more urge use of the simpler remedies as unquestionably the best. But if ulceration or a sloughy condition of the cornea is already present when treatment is begun, the result is often unfavorable, whatever means may be employed. Yet we need not wholly despair even where these conditions exist, as the eye will sometimes recover with at least partial vision.

A most important part of the physician's duty is to take every precaution against contagion. A minute particle of the morbid secretion may convey the disease to the eye of a healthy person. The attendant should therefore direct the thorough cleansing or destruction of all articles soiled with the purulent discharge; great care in using the syringe, so that no drop of the injection may be thrown back from beneath the lids into the eye of the nurse; and immediate washing of the hands whenever they have touched the sore eyes or anything contaminated by them.

AFFECTIONS OF THE SEBACEOUS GLANDS.

BY EDWARD WIGGLESWORTH, JR., M. D.

THE affections of the sebaceous glands, as far at least as frequency of occurrence is concerned, play in dermatology a rôle second only to that of eczema. The vernix caseosa of the fœtus, the crusta lactea of the infant, the "maturating pimples" of youth, and the seborrhœa of the scalp so frequently causing loss of hair during early maturity, are all merely manifestations of varying action on the part of the sebaceous glands. The "public evil comes home to each" practitioner of medicine, in the form of acne, more common in America than in Europe,

in the lean and nervous than in the stout and placid, in the North than in the South, in variable than in equable climates, and also especially prevalent in manufacturing districts; acne, the only perfect prophylactic against which is a fatty liver, and whose only permanent cure is senility. Now what is necessary for the proper treatment of the quantitative excess and the qualitative alteration of the secretion of these glands, and their inflammatory sequelæ? Is it an accurate acquaintance with the pathologico-histological anatomy of the material involved, and an exact knowledge of the physiological and chemical forces to be brought to bear? By no means! Buckingham and Trousseau have given the hint and the axiom as regards the therapy of such cases. The former says, "The country girl washes her face with soap, and does not have acne; the city girl abstains from the use of soap, and does." The latter declares, "Le remède n'est rien, la médication est tout et le mode d'administration principalement quelque chose de sacramental." In other words, Buckingham tells us what to use, and Trousseau the need of the proper use of it; for in the treatment of skin diseases the mechanical forces are often as potent as the chemical ones.

A very common affection, and one particularly distressing to the patient on account of the personal disfigurement involved, is comedones, the so-called "black-heads" or "skin-worms," in the language of quack advertisements. These occur especially upon the face and neck, also upon the breast and back, more particularly upon their upper parts, though they may occur wherever external influences tend to cause the obstruction of the sebaceous and hair follicles, as in the case of workers in metals, printer's ink, tar, etc. The disease consists in an over-accumulation of the natural secretion, with perhaps a deficiency in its more fluid constituents, with epithelial and gland cells, fat drops, embryonic hairs, often acari folliculorum, and sometimes crystals of cholestearine. This plugging of the follicles may be near their exits and quite superficial, may extend throughout their whole length, or may be deep-seated, in which latter case it tends to result in the formation of acne pustules. Where the skin is thick, the hair follicles long, and the sebaceous glands deep-seated, the heaping-up is apt to occur at the lower and closed end of the follicle. The black color of the free extremity of the sebaceous plug is due simply to dirt, the dust of the air being caught and retained by the oily and exposed surface of the plug.

The therapy consists in removing the plug and restoring the glands to their normal conditions. Constitutional treatment is also frequently of service, as comedones seem to be more frequent when phthisis, scrofula, or other general processes interfering with nutrition are present. The inspissated plugs are best removed by placing a watch-key over each of them in succession, and then pressing steadily and firmly down. The plug comes out like a worm (whence the common name

of the disease), pushing itself upwards into the bore of the tube of the key; it often springs out with a jerk perceptible by both patient and physician. It may be pressed out with the two thumb-nails or with a spatula. The key should have a large bore to admit of the entrance of the plug; the walls of the tube should be thick and smooth, as in new keys, to avoid cutting through the skin as with a punch, and the key should be placed upon the skin exactly perpendicularly, to prevent any cutting by one of the angular edges. It does not do at first to persevere in the use of the key if the reaction of the skin leaves a condition of things worse than that previous to treatment, as may sometimes be the case with skins predisposed to urticaria. As a rule the slight reaction soon disappears, therefore the operation should be performed at bed-time to give the skin an opportunity of regaining its normal condition before it is seen by others than the patient himself. Nor should many comedones be thus removed at the same time from a limited district of skin, lest the reaction should be too intense. They should be extracted from different parts, and the complete removal of all of them may thus require a considerable number of days. The comedones are not always extruded by the first application of the key. In this case the face may be exposed to the steam of hot water for a time before using the key; or an attempt made a few days subsequently, after the additional treatment to be described, will often prove successful; or a troublesome but almost unfailing plan may be employed, which consists in inserting the point of a cambric needle into the aperture of the follicle to the depth of a hair's breadth, and moving it round, but not so as to draw blood. This dilates the follicle, besides removing the epithelium, or whatever closes the orifice and prevents the removal of the comedo, which then yields to the re-application of the watch-key. The comedones, if not removed, act as foreign bodies, like splinters of wood or needle-points, and cause an inflammation of the skin which results usually in acne-pustules. Coincidently with the commencement of this treatment, and without waiting until all the comedones have been removed, we employ local applications.

As the best remedies are always the cheapest, so also the cheapest remedies are often the best; and the application first needed is that of soap, — common soft soap, "such as is used in washing floors," "three cents a quart at any grocer's," for skins that will bear it; for thinner skins, common yellow bar soap may be used, or for very delicate ones white castile soap. Skins too delicate to bear castile soap are, as the rule, too thin to allow of the formation of comedones, and skins too dry to bear it are rarely troubled by excessive formation of sebaceous material. When such cases do occur, for instance in delicate women, sponging the face with cologne water should be substituted. Our object is of course to soften and remove the epithelium, dissolve any still remaining

sebum, and wash out those follicles already emptied by means of the key. The chemical agents which dissolve fats are the ethereal oils, ethers, chloroform and alcohol, and the alkalies. The oils smell and are often too stimulating; ether, chloroform, and even alcohol evaporate too readily and are inferior to the alkalies, though of service alone and of still more use in combination with other remedies. Of the alkalies, lime and ammonia are not easy of application, or are too caustic. Soda and potassa are present in soaps, soda in the hard and potassa in the soft soaps. Soaps give us the cheapest, the most readily obtainable, the most easily applied, and the most efficacious applications. Moreover, the mildness or severity of treatment required is most easily gauged by the use of soaps. Chemically, the soft soaps possess more solvent power than the hard; mechanically, we can increase the action of soap by rubbing it in rather than spreading it on, or by spreading it as a plaster on cloth and applying it thus rather than spreading it upon the skin. Or by the combination of these two the effect is still more increased. German soft soap (sapo viridis) is a more elegant application than common soft soap. The finest preparation of all is the German soft soap (two ounces) dissolved in alcohol (one ounce) and allowed to digest for twenty-four hours, then strained and, if wished, flavored. The alcohol should be pure rectified spirit. This spirits of soap is best applied with white flannel, and rubbed into the skin either alone or with the addition of warm water, as the alcohol evaporates and the soap hardens. When merely washing the skin is not sufficient, the soap should be rubbed on and the foam allowed to stay all night. After a week or two of the use of the watch-key, followed by that of soap, the key may generally be dispensed with, the face merely washed with soap three times daily, and white precipitate ointment applied at night with the finger, left on all night, and washed off with soap in the morning. If at any time the skin becomes too dry, irritated, painful, and furfuraceous from the use of soap, this may be temporarily omitted, while the ointment is continued. Or the diachylon ointment of Hebra may be substituted. The former gives us the action of mercury upon the glands; the latter acts as an astringent. Both remedies supply to the skin proper the fat removed from it by the alkali, while at the same time they soften the hardened sebum in the follicles. The action of mercury may also be obtained by using two grains of corrosive sublimate to an ounce of glycerine, alone or with a little rose-water added. Glycerine, however, is a base and not a pure fat; and although like the fixed oils it does not dry up, it is sufficiently hygroscopic to withdraw water from the skin, and is to many delicate skins a strong irritant.

When stronger applications are necessary, sulphur soap may be used in the same way as common soap; or precipitated sulphur may be combined with carbonate of potassa, glycerine, and alcohol, and, for mild

cases, cherry laurel water, for more severe ones, sulphuric ether, of all equal parts, and this mixture be spread upon the skin with a camel's-hair brush or rubbed gently in at night and washed off in the morning with bran water, barley water, or water containing a little mucilage. Frequently after the second application and usually after the third, the skin becomes somewhat painful and reddened, possibly a little swollen, tightly drawn, and covered with fine scales. We have then attained our object, which is to set free the exits of the follicles, removing by desquamation the epithelial débris obstructing their orifices, and therefore the lotion may now for two or three nights be omitted and its place supplied by any simple ointment, an astringent one preferably, to remove the feeling of tension in the skin, and, by taking the place of the exfoliated epidermis, to protect the new cells. Such ointments should not merely be rubbed in, but also applied on cloths like plasters. It was a saying of Hebra's that an ointment thus applied was worth three times as much as when merely rubbed in and left to be removed by the first thing with which it came in contact, and in the mean time to become a receptacle for dust, dirt, spores, etc. These ointments, spread thickly, should be allowed to remain on the skin all night, and washed off with soap and water in the morning. A general direction always to employ soap with every act of ablution should also be given. There is, in this connection, a practical point to be borne in mind. However valuable a mercurial ointment or a sulphur paste may be separately, they should never be used coincidently. The employment of one contra-indicates that of the other, especially upon parts exposed to view, as the face; for the chemical combination of the sulphur with the mercury causes a black deposit upon the skin and in the orifices of the follicles, producing much the appearance of the very disease which is under treatment. Sulphur combines in the same way with the ingredients of other lotions which might be employed, such as lead water.

Comedones are usually only a local affection. When constitutional treatment is required it is usually on account of the anæmia or general debility of the patient, and this is often due to a scrofulous or phthisical habitus which interferes with the nutritive processes and amongst others with those of the sebaceous glands. Tonics are therefore called for, especially the nutritive oils. Olive oil, half an ounce after meals, is nutritive and slightly laxative. The animal oils are perhaps preferable to the vegetable. Cod-liver oil may be freely given, alone or with a little glycerine. Half an ounce of glycerine added to a six-ounce mixture in case of very many medicines tends to conceal any disagreeable taste. This applies particularly to the oils, and especially if a few drops of oil of cinnamon are added and the mixture well rubbed together. Some writers also hold that the internal administration of oil exercises a local effect upon the sebaceous glands, and increases in their

secreted products the amount of olein present, thus preventing the inspissation of the sebum, rendering it less like an irritating foreign body, and aiding its elimination from the follicles. They base their theory upon such facts, as the rarity of comedones in fat people; the immunity from this disease of patients with oily skins, as, for example, old drinkers, or of patients with fatty livers; and upon the results of such experiments as that of Boussingault, who found that in the case of a duck fed exclusively upon butter for a fortnight, the butter "oozed from all the pores of the body." But such views certainly lack verification. Such writers recommend also instead of oils the exhibition of glycerine, one drachm three times daily, in the belief that a base is thus supplied which, by uniting with crystals of stearine and margarine in the sebum, renders them fluid and aids their elimination. But here, certainly, the direct external application of the glycerine would seem to possess superior advantages.

In all cases of disease, and especially in diseases of the skin, it is to be borne in mind that the physician is not a necromancer, distributing specific magical antidotes to "poisonous humors," but a public educator to supply instruction in a much neglected but most important branch of knowledge, namely, that of hygienic laws, and his sphere of practical usefulness is co-extensive with his inculcation and dissemination of a proper comprehension of these laws and of the necessity for their observance. The habits of the patient as regards bathing, exercise, sleep, diet, and clothing; the condition of his home in respect to warmth, light, and ventilation; his habits in regard to the use of stimulants, narcotics, etc.; even his social and mental environment: all these require the careful consideration of the conscientiously thorough medical practitioner.

(To be concluded.)

RECENT PROGRESS IN PHYSIOLOGY.[1]

BY H. P. BOWDITCH, M. D.

VASO-MOTOR CENTRES.

From the fact that nervous centres presiding over the movements of the different voluntary muscles of the body are distributed through the length of the spinal cord, it is natural to suppose that the vaso-motor nerves arise from similarly situated centres. This, however, is not the opinion of the majority of physiologists at the present day. The experiments of Owsjannikow[2] on rabbits seemed conclusive on this

[1] Concluded from page 70.

[2] Ludwig's Arbeiten, 1871, page 21.

point. This observer found that a section through the medulla oblongata one or two m. m. below the tubercula quadrigemina did not produce vascular paralysis, as indicated by a manometer registering the arterial blood-tension. Any lower section, however, did produce vascular paralysis, and the lower the section the more complete was the paralysis, until a point four or five m. m. above the calamus scriptorius was reached. After the medulla had been divided at this point, not only did lower sections fail to produce additional paralysis, but the irritation of sensitive nerves did not cause a reflex contraction of the blood-vessels and consequent rise of blood-tension. Owsjannikow concluded, therefore, that the vaso-motor centre lies in a portion of the medulla oblongata whose upper and lower limits are those above indicated, and whose extent from above downward is in rabbits about four m. m. These observations have been confirmed by Dittmar,[1] who, by improved methods of making the sections, has been able to determine the limits of the vaso-motor centre with great accuracy, and by partial sections of the cervical cord has proved that both the centripetal and the centrifugal fibres, which are concerned in the reflex contraction of blood-vessels, run in the lateral columns of the spinal cord.

On the other hand, Vulpian[2] reports many observations which seem to prove that certain of the vaso-motor nerves do not have their origin exclusively in the medulla oblongata. He finds, for instance, that after section of the cervical cord the temperature of the posterior limbs rises, and that a subsequent section of one of the sciatic nerves causes a still further rise in the corresponding limb, indicating the presence of tonic vaso-motor centres in the cord below the cervical region. He also finds that, when the brain and upper part of the cord of a frog have been destroyed, a reflex vascular dilatation in the web of the foot may be produced by the application of an irritating substance to the web under observation. That this dilatation is due to a reflex action through the cord is evident from the fact that it does not occur after section of the sciatic nerve. He also shows that in a dog, curarized and kept alive by artificial respiration, a fall of temperature in the the foot may be produced by irritation of the central end of the opposite sciatic nerve, the cord being divided in the dorsal region. On the strength of these observations, Vulpian concludes that, though the medulla oblongata exercises a powerful control over all the vaso-motor nerves of the body, it is not to be regarded as the exclusive seat of tonic and reflex vaso-motor centres. On the contrary, these centres, like those which preside over coördinated muscular movements, are distributed through the spinal cord.

A reconciliation of these different views is probably to be sought in the fact that Vulpian's conclusions are drawn from observations on the

[1] Ludwig's Arbeiten, 1873, page 103.

[2] Op. cit., Lectures 7 and 8.

condition of the cutaneous blood-vessels as manifested by changes of temperature, while those of Owsjannikow and Dittmar are based upon determinations of the blood-tension which is affected by the condition of the blood-vessels generally, throughout the body.

In this connection the observations of Schlesinger[1] are of interest. This observer, experimenting on rabbits curarized and kept alive by artificial respiration, finds that section of the cervical cord does not prevent a reflex rise of blood-tension as the result of irritation of a sensitive nerve, provided that the animal is poisoned with strychnia, though without this poison the reflex phenomenon does not manifest itself. Now, the known action of strychnia being to increase the irritability of the centres of muscular movement lying in the spinal cord, the conclusion seems probable that vaso-motor centres also lie in this region, but that it is only when their irritability is increased by strychnia that these centres can, through stimulation of sensitive nerves, be brought into a sufficient degree of activity to produce any perceptible change in the blood-tension.

Budge, also, in his report of experiments showing that irritation of the crura cerebri causes a rise of blood-tension,[2] expresses the opinion that this effect is due to a reflex stimulation of vaso-motor centres in the spinal cord, through sensitive fibres lying in the crura cerebri.

With regard to the situation of the "vaso-dilator," as distinguished from "vaso-constrictor" centres, there is little that can be stated with positiveness. Only in the case of the nervi erigentes has a definite "vaso-dilator" centre been demonstrated. This is to be found, according to Goltz,[3] in the lumbar region of the spinal cord, the proof being that in dogs, after division of the cord between the dorsal and lumbar regions, friction of the glans penis causes an erection, while after destruction of the lumbar cord no such reflex effect can be produced. A strong irritation of the sciatic nerve produces an inhibitory effect upon this "vaso-dilator" centre, so that during the continuance of the irritation, friction of the glans penis remains without effect. This centre can also be stimulated and inhibited by nerve-fibres coming to it from above, as is proved by the observations of Eckhard[4] that the irritation of certain parts of the brain will produce an erection, and by the fact that section of the dorsal cord favors the production of an erection by peripheric irritation, as, for example, by friction of the glans penis.

VASO-MOTOR NERVES OF LUNGS.

Recent observations of Badoud[5] seem to show that the blood-vessels of the lungs are kept in a state of very moderate tonic contraction

[1] Wiener medicinische Jahrbücher, 1874, i., page 1.
[2] Pflüger's Archiv, vi., page 303.
[3] Pflüger's Archiv, viii., page 460.
[4] Beiträge zur Anatomie und Physiologie, vii., page 69.
[5] Ueber den Einfluss des Hirns auf den Druck in der Lungenarterie. Würzburg. 1874.

under the influence of vaso-motor nerves. This observer, working under Fick's directions, measured the blood-tension in the right ventricle of dogs by means of a glass tube introduced through the jugular vein. The tension in the right ventricle during the systole is, of course, the maximum tension which can prevail in the pulmonary artery. The tension in the carotid artery was measured at the same time by a spring manometer. Section of the cervical cord was found to cause in the pulmonary circulation a considerable, and in the systemic circulation a much greater diminution of blood-tension. This shows that the normal tonicity of the pulmonary arteries is less than that which prevails in the systemic circulation. Irritation of the cord caused a rise of blood-tension in both the pulmonary and the systemic circulation, the rise in the former system of vessels being so great that it could not be regarded as a secondary effect of a contraction of the systemic arteries forcing the blood back upon the lungs, but indicating rather the existence of vaso-motor nerves in the pulmonary vessels themselves.

THE UTILIZATION OF SEWAGE.[1]

Translated from La Santé Publique, November 1, 1874.

BY CHARLES F. FOLSOM, M. D.

In 1869, from five to six thousand cubic metres of sewage were freely and gratuitously given away to farmers. The peninsula of Gennevilliers, a gravelly plain of four thousand acres bounded by a double bend of the Seine, hitherto barren and almost uncultivated, has been transformed by this means.

An increase in the tenantable value of the land followed at once, houses were built, and the village Grésillons sprang up, without the slightest trace of influences injurious to health having been observed in either summer or winter.

In spite of the delay caused by the war in carrying out this great sanitary work, powerful engines now supply eighty thousand cubic metres of sewage daily to the sandy plain. In order to facilitate the experiments, the city of Paris furnishes the sewage gratuitously to the land-owners and keeps a model-farm for instruction in its use. Those who get the sewage devote themselves to kitchen-gardening; and a dry, scorching waste has been changed into luxuriant fields. Early vegetables thrive better there than in other places, on account of the higher temperature of the water. In place of an annual expense per acre of six hundred and fifty francs for irrigation and seven hundred and

[1] Les Eaux de la Seine: Assainissement et Fertilisation par les Eaux d'égouts. P. Garnier.

fifty francs for manure, the cost of sewage irrigation is almost nothing. Stone sewers and pipes underground distribute the fertilizing fluid, and a natural slope in the surface of the land will often serve for its more ready discharge. Trenches connected by a trough running at right angles to them conduct the sewage to any spot desired. This is accomplished by placing one end of the trough in communication with the main sewer by means of a wooden sluice-gate, which can be opened and shut at pleasure.

The yearly profit in farming has been increased from two hundred and fifty to two thousand francs per acre. Add the progressive increase in the value of the land, and it will be seen that it has been a real fortune to the lucky land-owners of Gennevilliers. The gain would be no less for Paris, if all its sewage and excrement were utilized in this way; that is, if its solid filth, estimated at one thousand six hundred and forty cubic metres a day, fell directly into sewers, as in London, Brussels, Vienna, and other capitals, thereby enriching the sewage. Collected in nearly two hundred thousand movable buckets and large cesspools, as in Paris, it forms just so many foci of ill health in all the houses, apart from the nuisance resulting from its removal and the processes of drying and pulverizing. Such a happy change in garden culture in the vicinity of Paris would not fail, through competition and accessibility to markets, to reduce the prices of fruits and vegetables, and so contribute to the public welfare. But these pecuniary considerations are only secondary in a matter of so great sanitary importance. Whatever is gained in salubrity represents a considerable material gain in diminishing disease, loss of time and labor, and death. It is, then, an indirect but unfailing means of increasing the public prosperity.

Unfortunately this is only an experiment. The greatest part of our sewage is still lost for fertilizing purposes, and still pollutes the waters of the Seine. It has been given to any who wanted it, and the considerable expenditure has not in any way been reimbursed to the city. The perviousness of the soil of Gennevilliers, which readily absorbs all the liquids spread over its surface, will necessarily be exhausted at some more or less remote time; and then it will be necessary to resort to deep drainage to prevent the emanations from constituting another source of pestilence, or still other measures must be adopted.

The thing to do, therefore, is to speedily convey our sewage by canals to all the light, sandy soils below Paris, to fertilize them and to purify the waters of the river. The feasibility of the plan has been proved, and it only remains to follow it up. All intelligent land-owners and farmers are already interested, as the increase in value of land which will ensue will be a source of great profit to them. The material will not fail; for, estimating that one hundred and twenty-five people are sufficient for one acre, the sewers of Paris alone, with its two million

inhabitants, would fertilize sixteen thousand acres. And, as it has been shown that instead of loss there is gain to the community in increase of crops, in getting rid of foul emanations, and in general comfort, there is no reason for hesitating, there is no danger to fear, there are only advantages to be gained.

This example of Paris should not be lost to the provincial cities. It is important in a sanitary point of view that their filth should be all collected and utilized, especially where there are extensive dry fields in their vicinity. Light, pervious, sandy soils are best suited for sewage irrigation. It is especially for the interest of manufacturing cities to use as a fertilizing agent the refuse, particularly that from privies, which is thrown into water-courses, polluting rivers and giving rise to epidemics. No town, manufactory, farm, or house can afford to be without its means of collecting and utilizing its sewage; and that negligence is inexcusable which allows such a nuisance to increase until an epidemic appears or the law compels interference. For money spent in sanatory works is returned a hundred fold in the welfare of the people.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

[REPORTED FOR THE JOURNAL.]

NOVEMBER 14, 1874.— DR. MINOT, the President, in the chair.

Glandular Hyperplasia of the Uterine Mucous Membrane.— DR. LYMAN reported the case of a patient, who, a year ago, began to flow very badly, and was supposed to have fibrous tumor of the uterus. Six weeks later, the hæmorrhage recurred. There was a hard mass above the pelvic bones. The examination was moderate, the patient being much exhausted from loss of blood. She had ergot and was kept perfectly quiet. The flowing ceased; she went on well and gained strength. A week ago there was hæmorrhage again. Dr. Lyman introduced a couple of tents, and the next morning passed in the placental forceps, but got nothing. There was general enlargement of the uterus from endometritis. With a curette, disorganized and disintegrated masses of hypertrophied mucous membrane were removed from the inner surface of the uterus. The hæmorrhage ceased. The future chances of the patient are good, but she is liable to a recurrence of the disease.

DR. FITZ, who had examined the specimen, described it as a glandular hyperplasia. There was increased thickness and vascularity; the follicles were increased in depth and there was a proliferation of cells. This is a condition somewhat similar to adenoma of the mucous membrane of the rectum.

Cephalhæmatoma.— DR. FIFIELD remarked that he had always been in the habit, as had his father before him, of treating bloody tumors of the scalp with the lancet, and no harm had come from this mode. Some time ago he punct-

ured one of these tumors with the aspirator, but in consequence of an accident to the instrument, he finished the operation with the knife, and in this case also with successful issue.

Placental Forceps. — Dr. Arnold exhibited Loomis's placental forceps and explained the method of using the instrument. He reported a case in which he had employed this means with satisfaction.

Dr. Fifield said, with reference to removing placental masses, he never could do anything with the placental forceps, but had always succeeded by the method taught him by Dr. Miller, namely, to put the patient on her back with her feet in chairs, then to place one hand upon the hypogastrium, and with the index finger of the other hand to hook down the uterus. Having on one occasion passed the forceps through a long, narrow os, he was afraid to withdraw them in position, convinced that by so doing he should split the cervix. In this case, there had been no show from May till August, then nothing till the last week in October, when he saw the patient after a hæmorrhage of four or five days. He extracted a placental mass having a central cavity which held a fœtus of six weeks' growth. The question then was whether an intercurrent hæmorrhage marked the point of death of the fœtus. In this case apparently it did not do so.

A Case of Face Presentation. — Dr. Fifield also reported a case of face presentation which he had seen in consultation with Dr. Blanchard, of Neponset. The lips, greatly swollen, were protruding, trumpet-shaped, from the vulva. He had never before seen such a full, fair face presentation. Delivery was easily effected by forceps.

A Novel Expedient in a Difficult Labor. — Dr. Cotting, to illustrate what a quick-witted man may do in an emergency, gave the account of a sea-captain who was crossing the Atlantic with a load of immigrants, one of whom was a woman in labor. At the end of the first day he consulted his medical library without getting any satisfactory information. At the end of the second day the woman was getting exhausted, the pains were diminishing, the scalp protruding, "everything blocked up," general condition of things deplorable. Appealed to in this emergency, the captain placed the woman on her side, flexed the exposed thigh forcibly upon the abdomen, placed his knee against the lower end of the sacrum, at the same time telling her to strain away for once and all, which being done, the child was immediately born.

Statistics of Births in Massachusetts. — Dr. Draper, who said that he had been recently looking up the statistics of births in Massachusetts, gave the following as among the results of his investigations. Most children have been born in the latter half of the year, and the majority of these in the last quarter. In the last twenty-five years, the period included in the examination, the proportion of males to females born has been as 106 to 105. The births of children of American parentage have decreased from 63.02 per cent. in 1849 to 39.98 per cent. in 1873; the births of children of foreign parentage have increased from 35.96 per cent. in 1849 to 48.24 per cent. in 1873; while those of mixed parentage, one parent being foreign and the other American, have increased during the same period from 1.02 per cent. to 11.78 per cent. Still-born males have been greatly in excess of the females. Of plural births, the proportion is constant, 1 to 100. In 1873 there were six cases of triplets.

Dr. Chadwick asked if the customs with regard to marriages had anything to do with the time of births. In Vienna the effect of the Carnival is very marked nine months later.

Dr. Draper said the greatest number of marriages in Massachusetts is at Thanksgiving time, in November, while the smallest number is in March.

Abnormal Condition of the Vagina. — Dr. Chadwick reported a case of flooding from mucous polyp in the cervix uteri, in which he found the vagina blown out like a balloon. A year ago he saw the same condition in a woman who had miscarried. The vaginal wall was firm and the rugæ were gone. He asked for an explanation. The condition disappeared in a day or two.

Dr. Sinclair said the nearest resemblance to anything of this sort he had seen had been in cases where the vagina had been distended with air; but he could not say that in these the rugæ had disappeared.

Amputation of Cervix Uteri with Serious Consequences. — Dr. Lyman reported the case of a patient at the City Hospital who had her cervix uteri amputated. Not doubting that such an operation may be sometimes useful, although he had never had occasion to perform it, he wished to say a word of caution with regard to amputating too high up. In the present case, the section had been made close up to the reflection of the vagina, and had apparently wounded the circular artery, as the woman continues to have a hæmorrhage not yet under control. In some cases of high amputation, the écraseur has included the bladder, which has thus been opened.

Dr. Chadwick said that Dr. Emmet, of New York, whom he had recently seen, informed him that he had found incision through the posterior lip to answer all the purposes of amputation.

A Case of Blighted Ovum. — Dr. Arnold reported a case related to him by Dr. Garceau, and showed the specimen.

Mrs. T., aged thirty-five years, has borne four children, the youngest child being two and a half years of age. The patient is healthy, even robust. Catamenia have been absent eleven months. After the amenorrhœa had continued nine months, she consulted Dr. Garceau. There was no unusual abdominal enlargement. The general health remained good. Without vaginal examination, Dr. Garceau advised her to wait. Subsequently a vaginal examination was made, the os uteri was found to be soft and patulous, and having the feeling of an impregnated uterus. The patient could not be persuaded that she was pregnant, as she had had none of the symptoms, except the suppression of the menses. She had lived with her husband during the whole time. As her health was perfectly good she was again advised to wait.

At four o'clock in the morning of the 7th of November, 1874, eleven months from her last menstrual flow, Dr. Garceau found the patient extremely weak and blanched from loss of blood. According to the account obtained, she had begun to flow at ten o'clock the previous evening, and being sure she was not pregnant, she suffered the bleeding to go on until the bed and clothing and abundance of cloths had been saturated, and until from loss of blood she was completely blanched and was alarmingly weak. Vaginal examination discovered a mass protruding from the os. Unable to dislodge the substance without instrumental aid, Dr. Garceau sent for forceps. In a short time,

however, the os had become so dilated that when the forceps came the mass was easily extracted.

The uterus contracted well, and there was no further hæmorrhage. The patient rallied speedily and made a good recovery.

The mass proved to be an undeveloped ovum. The whole growth was of the size of a child's head; it contained about a pint or more of liquor amnii. The placenta, of the size of one at six months in the normal state, presented the anatomical structure of placentæ, but felt more dense and firm. Attached to this was a rudimentary cord, about two inches in length, to which was appended an almost microscopical fœtus.

Dr. Fitz said that placental tufts, as seen under the microscope, could not be confounded with other uterine structures, and if found in this specimen would leave no doubt as to its character.

Dr. Fifield asked how much such masses resemble "fleshy moles," and to what extent these are the result of impregnation.

Dr. Fitz said fleshy moles often contain coagulated blood between the membranous layers.

Dr. Jackson said of the fleshy moles which he had seen that they very generally presented sufficient evidence of being ova. The external surface of the specimen shown by Dr. Arnold was very characteristic of the rough condition generally found on the maternal surface of long-retained placental masses. He referred to a uterine cast thrown off after labor and consequently of large size, representing almost the entire cavity of the uterus. There was no question of its being a true slough. We know, Dr. Jackson remarked, that the inner surface of the bladder will slough off, and Liston once correctly diagnosticated this condition. Dr. John Homans had reported a case of sloughing of the lining of the urethra in a patient with gonorrhœa. There was no doubt in this case also that it was a true slough. Its structure was perfectly defined; there was no appearance whatever of false membrane. At the museum at Heidelberg is exhibited the larger portion of a man's stomach, which the patient vomited during life. He had swallowed sulphuric acid. Dr. Jackson had seen the specimens, which were the portion of stomach vomited, and the fragments remaining about the pyloric and cardiac orifices.

Dr. Fifield remarked that a number of cases of sloughing of the bladder are reported in the Transactions of the London Obstetrical Society.

A Case of Bifid Uterus. — Dr. Hodgdon reported the case of a woman who recently died under his care. He was first called to her a week before her death, to prescribe for a diarrhœa. She was twenty-four years of age and had been married a year. She had had cough since the age of fourteen. She never had even a symptom of menstruation. On examination, Dr. Hodgdon found a complete septum across the vagina, and back of this he felt something like an os uteri.

Dr. Fitz, who had made the autopsy, showed the specimen. It was a rare bifid uterus. The smooth vagina formed a short cul-de-sac; at its upper portion was a small triangular mass, the rudiment of a cervix. It did not communicate with the vagina; it had no opening. There were two cornua, terminating in large oval masses whose distal portions had cavities lined with a

smooth membrane continuous with the lining of the Fallopian tubes; but they were wholly closed in a downward direction, towards the triangular body, and therefore had no communication with the vagina. The broad ligament was complete. The ovaries were normal in shape, and both had cicatricial depressions apparently indicating ovulation, although there was no blood. The urethral orifice was distinct from the vagina.

Dr. Jackson said that a number of years ago he saw in a dissecting-room subject a remarkable example of undeveloped uterine organs. The subject was a German immigrant twenty-one years of age, of whom it was positively asserted that she had menstruated regularly, previously to the seasickness with which she suffered on the voyage. The vulva was perfect; but on separating the labia the vagina was seen at once to terminate in a cul-de-sac. At the normal site of the vagina was a thickened condition of the tissues, which increased at the upper part and finally branched as the analogues of uterine cornua. There was a short Fallopian tube and quite a large flattened ovary on one side. The other horn was several inches in length, and extended down the course of the round ligament, passed through the parietes of the abdomen, and escaped below Poupart's ligament, where the students, dissecting, found a "curious lymphatic gland," which proved to be the ovary, but remarkably smooth. No cavity was anywhere found in any portion of this specimen. The case was published.

Dr. Sinclair, on being appealed to, said he thought the alleged menstruation might have occurred vicariously.

Dr. Jackson stated that he had seen a specimen of blood, apparently menstrual, reported to have oozed from a patient's cheek, and considered an example of vicarious menstruation.

Dr. Minot stated that Dr. Townsend, of Natick, had a patient who menstruated from the nipples repeatedly and in large quantities.

THE ANNUAL REPORT OF PRESIDENT ELIOT.

The annual report of the President of Harvard College contains many points which are of interest to medical men; and first among these is the allusion to the losses which the university has sustained by death. Science has lost Agassiz and Wyman, the medical profession Dr. George Derby, and the dental school one of its ablest professors, Dr. Hitchcock. The professorships thus left vacant are in three instances, at least, peculiarly difficult to fill. It will, we fear, be a long time before worthy successors to these men can be found. We are not rich enough in scientific men to fill the gaps so rapidly made in the front rank. A few more such losses would seriously cripple the university.

The liberal and progressive character of the government of the university is perhaps shown nowhere more clearly than in its earnest desire to promote the physical exercises of the students. The changes which have taken place during the past ten years in the character and variety of these exercises, and in

the number of students who participate in them, is marvelous. For instance, to provide the greatest facilities possible for boating, a boat-house has been built by the corporation, so arranged that all students for a very moderate sum may indulge in this exercise for the season. The numerous athletic clubs which have of late years been formed, and the great variety of manly sports practiced at Harvard, are abundant evidence of the success of this policy. The gymnasium has become far too small for the greatly increased number of students who frequent it, and it is now proposed to convert it into a swimming bath which would be available at all seasons of the year.

While the president does not recommend compulsory physical exercise at college, he thinks this should be part of every school education. "Most American schools," he says, "entirely neglect this very important part of their proper function; many young men, therefore, come to the university with undeveloped muscles, a bad carriage, and an impaired digestion, without skill in out-of-door games and unable to ride, row, swim, or shoot." This unsightly picture represents unfortunately a large class of young Americans; a class which we hope to see constantly diminishing. Already a great improvement is noticed in the physique of our city boys whose military and gymnastic training has straightened their backs and strengthened their muscles. Habits of exercise thus acquired in early life should be encouraged in every possible way during the university course. We hope the day will come also when American men will see something more than childish sport in these habits; when the business man, the lawyer, and even that sacred individual, the doctor, will be able to spare a few moments of his precious time to recuperate nature. The severity of our climate cannot be pleaded as an excuse, for even in Canada a season is found for fox-hunting, cricket, and the full list of English games. The present "revival," if we may call it such, of athletic sports at Harvard is a movement full of interest and promise.

The corporation has erected a small pavilion hospital, in an isolated position, with every convenience for taking care of the sick, thus enabling the college to protect itself in the future against epidemics, with which on one or two occasions it has been threatened.

We are glad to see that the new plan of instruction of the medical department has met with such success from a pecuniary point of view. Whereas in two previous years there had been a considerable deficit, the accounts of last year show a surplus of over three thousand dollars. This, with a rapidly increasing class and a strong indorsement from the public in the shape of a handsome fund subscribed for a new building, makes the future unusually promising.

RAIN-WATER CONDUCTORS AS SEWER-VENTILATORS.

The Suffolk District Medical Society will be called upon next Saturday night to consider a sanitary question of great importance. The discussion of the subject in this society was introduced on the motion of a medical gentle-

man who desires that the profession shall protest against what he deems an outrage perpetrated by the City Council of Boston against the public health. The grievance is in brief as follows. About six months ago the City Council passed an order directing that all rain-water pipes then discharging directly upon the sidewalks should be connected with the common sewers, and that the names of those who neglected to obey the order should be recorded. The object of this was mainly to prevent the overflow of rain-water and snow-water upon the sidewalks; indirectly, it was intended to effect the general repair of defective conductors. It does not appear that the question of sewer-ventilation was touched upon in the deliberations of the City Council; the only purpose of the measure, expressed or implied, was as above stated. It is not even plain that the order has a legal and binding force, although in obedience to its dictates many house-holders proceeded to connect their rain-water pipes with the street sewers. With zeal, if not with entire discretion, the physician above alluded to has repeatedly protested in the daily press against this action on the part of the city government, on the ground that just so many openings are made for the escape of "putrid" sewer-gases, resulting in the contamination of the atmosphere and the development of conditions which will certainly be prejudicial to the public health. Inasmuch as this matter, though local in its present bearings, touches important sanitary principles of universal application, we venture to say a word concerning it.

If there is one subject upon which sanitarians are agreed, it is that sewer-gases are unwholesome. To render these gases innoxious, to deprive them as far as possible of their harmful quality, has been for years a difficult task for sanitary engineers, and the problem is still far from solution. It has been found practically impossible to deal with the gaseous and with the fluid constituents of the sewer-contents alike, and in the expectation that both will be discharged together at the sewer-outlet; for water and gas have contrary tendencies. Accordingly, means are taken to prevent the backward pressure of the gases and to oppose their escape into dwellings. Drain-traps offer to such pressure and escape an obstacle which is measurably effective; but at times and under certain circumstances even these preventives are forced. To meet this difficulty, cities which are alive to the importance of the matter provide ventilation for their sewers, and in some instances, like those of London, Liverpool, and Dantzic, very elaborate plans are put in operation for the escape of sewer-gases, their disinfection, and their destruction. Moreover, the fact of the diffusion of the noxious gases and of the necessity for preventing their escape into dwellings has long been recognized in practice, in the special measures for house-drain ventilation adopted by intelligent builders; we allude to the continuation of the soil-pipe, in its full size, to the outer air above the roof of the house, a plan fully commended by sanitary authorities. With all these measures in force, the systematic ventilation of sewers along the roadway and the provision of proper outlets for the escape of the gases from house-drains, the interior of dwellings is protected. Under such conditions, it is never justifiable to employ rain-water conductors as sewer-ventilators.

But what is the condition of things in Boston? It is essentially that common to American cities; probably not any better, we hope not any worse.

Our sewers have no ventilation save what they obtain by accident or force. Until our City Council unintentionally afforded an additional chance for sewer-air to reach the outer air through the rain-water conductors, every dwelling had so much the greater chance of receiving intermittent discharges of sewer-gas within its walls and where the exhalations would be most harmful. We can hardly take into account here the comparatively few houses whose soil-pipes are open at both ends, — into the drain and above the roof, — or those whose traps or drains have special ventilation. The City Council therefore enacted better than they knew, in our opinion; and those who, in executing the order, connected their conductors, without traps, with the sewer did not commit an error. The sewer-gas seeks the outer air, where it is speedily diluted, diffused, oxidized; it is far better that the noxious product should escape outside our dwellings, than within them.

We are aware that certain exceptional cases may be cited where harm may come because the upper opening of the rain-water pipe is too near a window, permitting the entrance of the gas to sleeping-rooms. Such cases will be few, we think, and the resulting harm will bear no proportion to that probable where no outlet for sewer-air is provided. When our city government becomes enlightened enough and liberal enough to provide a good system of sewerage in all respects, then we will join heartily in denouncing the use of rain-water conductors as sewer-ventilators. Meanwhile, we think we ought to be thankful that things are not worse than they are.

INFANTILE PARALYSIS ACQUIRED DURING DELIVERY.

The Paralysis of Children acquired during Delivery is the subject of a recent article by Dr. Seeligmüller, of Halle. The paper, as contained in the *London Medical Record* of December 23, 1874, states that in text-books only facial paralysis is mentioned, a form which is seen frequently enough, but is often overlooked, as it is only perceptible when the child cries, and in most instances it disappears during the first few days after delivery. Its pathogeny is very simple; the blade of the forceps presses on the trunk of the facial nerve or one of its branches, and causes an arrest in the excitability of the affected nerve-fibres and consequent paralysis of the facial muscles supplied by them. As has been stated, this form of paralysis generally recovers spontaneously in a short time after the birth of the child, but sometimes the lesion is permanent. Duchenne relates one case of a girl of five and a half years and another of a girl of fifteen years, both of whom suffered from well-marked facial hemiplegia consequent upon the application of forceps. When seen by Duchenne, all chance of cure by electricity was lost.

The application of forceps may produce, besides facial paralysis, paralysis in other regions; for example, paralysis of one or other of the upper extremities through pressure of the apex of the forceps on the brachial plexus. A case is mentioned of a child who, when eleven days old, did not move its right arm.

The limb lay immovable along the trunk of the child; the fore-arm was extended in a state of pronation; the fingers were flexed on the palm; these, as also the hand in a less degree, moved with fair freedom. The arm was completely powerless, though its sensibility was not at all diminished.

By the twenty-fourth day after delivery, after friction with warm aromatic wine, there was some improvement. At this date the child was lost sight of. Most frequently paralysis of one or both upper extremities is the result of difficult extraction, particularly in breech-presentations in cases where there have been severe pressure and dragging on the shoulders. The author has found but one necropsy published, from which to report respecting the pathological anatomy of the injured parts. In this instance there was found a slight extravasation of blood into the tissue surrounding the left brachial plexus at its origin. The nerve-fibres forming the plexus, from their origin to beyond the scaleni, were stained with blood, which was not removable by washing; the consistence of the nerves remained normal. The facial nerve was similarly affected at its exit from the skull, and the surrounding tissues were ecchymosed. Quite in accordance with this state of things is a report from Dr. Fritsch, who found in several necropsies, made on breech-cases, numerous ecchymoses beneath the skin in the neighborhood of the shoulder; and who accordingly conjectured that the same had occurred in the region of the muscles and nerves. That such ecchymoses can alone produce paralysis, so that with their disappearance the paralysis also vanishes, the following observation of Dr. Fritsch goes to prove. On the second day after a difficult delivery of the head, he discovered in the neighborhood of the lower end of the sterno-mastoid a distinct baggy swelling (hæmatoma) about two inches broad. The arm was paralyzed. With the disappearance of the swelling, perfect movement returned.

In typical cases of uncomplicated paralysis of the upper extremity the paralyzed arm hangs motionless by the side of the trunk, the head of the humerus is rotated inward to its extreme extent, the triceps being thrown forward. The position of the hand is most striking. It is in a state of extreme pronation, the arm lying along the side of the body with the palm of the hand looking outwards; and in the most usual position of the arm, that of moderate flexion at the elbow, the radial border of the hand with the thumb does not look forwards and upwards, but the ulnar border, with the little finger, assumes that position. The function of the hand is, in consequence, much interfered with, although the fingers often retain their freedom of movement.

The abnormal rotation of the upper arm depends upon paralysis of the infra-spinatus muscle, and therefore of the subscapular nerve that supplies it. The infra-spinatus alone rotates the arm outwards; consequently, when it becomes paralyzed, its powerful antagonists, especially the pectoralis major, and also the sub-scapularis and latissimus dorsi, rotate the arm inwards. That the infra-spinatus is really paralyzed has been proved by faradization. Other muscles in the region of the shoulder may be paralyzed, as the deltoid and also not unfrequently the biceps and brachialis anticus. From the wasting of the deltoid the humerus sinks downwards, and a hollow appears beneath the acromion; while, in consequence of the paralysis of the flexor muscles, the arm becomes incapable of active flexion at the elbow.

As to prognosis, — remembering that we have to deal not only with lesions of nerves, but likewise with lesions of muscles, often complicated with pressure upon the nerve trunks from extravasations, etc., — we should not leave the cure to nature alone. The author agrees with Duchenne, that if left alone the paralyzed muscles rapidly atrophy and degenerate. It is only the earliest possible application of methodical faradization that can prevent this unfortunate result. Even facial paralysis should not be left to spontaneous recovery more than four weeks, and paralysis of the upper extremity a less time. As soon as the child is five or six weeks old, a feeble current of faradic electricity should be applied for about five minutes, twice or three times a week at first, to each paralyzed muscle. Special attention must be paid to the infra-spinatus muscle in cases of rotation of the head of the humerus inwards; both electrodes must be applied directly upon the fossa infra-spinata. Passive motion of the humerus outwards should not be omitted.

MEDICAL NOTES.

— Sir Henry Thompson has resigned the office of surgeon at University College Hospital, London. The early retirement of this eminent surgeon from the public duties of the hospital is said to be owing to the pressure of private professional work, which will be the more severely felt now, owing to the untimely death of the late Mr. John Foster, who had for many years rendered him great assistance.

— The forty-third annual meeting of the British Medical Association will be held in Edinburgh in the first week of August, 1875, under the presidency of Sir Robert Christison. The addresses are to be given by Dr. Warburton Begbie, and Professors Spence and Rutherford. The programme is an inviting one. It is anticipated that Professor Lister will give a great demonstration of the results arrived at in antiseptic surgery. It is intended to establish a scientific section devoted more particularly to papers on physiology and anatomy. This association was founded in 1832 by Sir C. Hastings, of Worcester, at a meeting of some fifty members of the profession. The association at present numbers considerably more than five thousand members.

— A case of phthisis was admitted to the Metropolitan Free Hospital, London, the cause of which seemed to be immoderate drinking. The patient asserted positively that for a week at a time he had occasionally drunk six or seven gallons of beer daily.

— The Paris correspondent of the *British Medical Journal* writes that at a recent meeting of the Academy, M. Le Fort read his report on a paper by Dr. Lelièvre on a substitute for the ordinary linseed-meal poultice, which M. Le Fort was charged to investigate. Dr. Lelièvre proposes the "fucus crispus," or Carraghean lichen, as it possesses the following advantages. It may be cut into thin plates of the size required, and, when steeped in hot water, it softens and swells in a few minutes. This new poultice has been tried by MM. De-

marquay, Gosselin, and Verneuil in their respective hospitals, and they have pronounced it to be far superior to the linseed poultice; it keeps moist for more than sixteen or eighteen hours; it does not slip; is inodorous; does not readily ferment, nor does it soil the linen or bed of the patient. This new poultice is destined to render great service to the hospitals, ambulances, and particularly on board ship, where it is difficult to keep the linseed in a state of preservation.

— Mr. John B. Foster, the assistant of Sir Henry Thompson, met his death recently under somewhat peculiar circumstances. An explosion of gas in the room where he was, brought on an attack of meningitis, which caused his death in a few days.

— From recent experiments, Professor Lister has arrived at the conclusion that the septic matter present in water is not in solution, but consists of insoluble particles, which are held in suspense.

— Dr. Chenu reports that during the Franco-German war, the French lost 138,871 men by wounds or disease. This includes 2818 officers. The Germans lost 40,741.

— The Children's Hospital of this city has just established, and now has in full operation, a dispensary for the gratuitous treatment of children who are not sick enough to be admitted to the hospital wards. This action on the part of the hospital is entirely praiseworthy; it attests both the enterprise and the prosperity of this well-known Boston charity. In general we are opposed to the multiplication of medical dispensaries, as tending to increase fraudulent practices among those least worthy to receive the benefits of professional liberality, and because, on that account, the revenue as well as the *morale* of physicians is injured. But we make an exception in the present instance, and for good reasons: the new dispensary is in the midst of a thickly settled section, which is far out of the reach of the institutions already in existence for similar service. There is really a field and a need for the new department, and the purpose of its founders is fully justified. The convenient and accessible room secured at 1525 Washington Street and the efficient administration of the hospital staff are two additional and fruitful elements of success for the new enterprise.

— Dr. Austin Flint recommends the cold pack in place of the cold bath in the treatment of disease. The patient's body is wrapped in a sheet wet in cold water, and the sheet is sprinkled from time to time from a watering-pot. The pack is to be continued from ten minutes to half an hour, according to the temperature and condition of the pulse.

— A donation of twenty thousand dollars has recently been made by a citizen of Syracuse to the university in that city. Since last June the university has received one hundred and seventy-four thousand dollars, which brings its endowment up to eight hundred thousand dollars.

— Some curious statistics regarding inheritance have recently been published by Dr. Harris, of New York. His attention, says the *American Medical Weekly*, was called, some time since, to a county on the upper Hudson

which showed a remarkable proportion of crime and poverty to the whole population,— four hundred and eighty of its forty thousand inhabitants being in the alms-house,— and upon looking at the records a little, he found certain names continually appearing. Becoming interested in the subject, he concluded to search the genealogies of these families, and, after a thorough investigation, he discovered that from a young girl named "Margaret," who was left adrift, nobody remembers how, in a village of the county, seventy years ago, and, in the absence of an alms-house, was left to grow up as best she could, have descended two hundred criminals. As an illustration of this remarkable record, in one single generation of her unhappy line there were twenty children; of these, three died in infancy, and seventeen survived to maturity. Of the seventeen, nine served in the State prisons for high crimes an aggregate term of fifty years, while the others were frequent inmates of jails and penitentiaries and alms-houses! The whole number of this girl's descendants, through six generations, is nine hundred, and besides the two hundred who are on record as criminals, a large number have been idiots, imbeciles, drunkards, prostitutes, and paupers. A stronger argument in favor of the inheritance of vice, and for careful treatment of pauper children, could hardly be found.

SURGICAL OPERATIONS AT THE BOSTON CITY HOSPITAL.

[SERVICE OF DRS. CHEEVER, THORNDIKE, AND WADSWORTH.]

THE following operations were performed dur ng the week ending Friday, January 15, 1875: —

1. Excision of tibia for compound fracture of the leg. 2. Wound of musculo-spiral nerve. 3. Abscess of the thigh. 4. Necrosis of the tibia. 5. Lupus. 6. Hydrocele of the cord. 7. Tumor of eyelid. 8. Canthoplasty. 9. Necrosis of the tibia. 10. Fibro-cartilaginous tumor of face. 11. Carbuncle.

1. *Excision of the Tibia.* — The patient is twenty-nine years old, and has worked in a lead factory eight years. He was injured on an elevator a short time before he was brought to the hospital. There was a compound comminuted fracture of the tibia and fibula in the middle third. The ends of the fractured tibia were protruding from the wound. The large vessels were not injured. Dr. Cheever removed a detached piece of the tibia, an inch long, and comprising two thirds of the circumference of the shaft. The sharp extremity of each fragment of the tibia was sawed off, the bones put in place, and the leg laid in a fracture-box. A cold-water dressing was used at first. At present, the application is a lotion of chlorinated soda and laudanum.

2. *Wound of Musculo-Spiral Nerve.* — A press-boy, sixteen years of age, was caught in a lithographic press, and received a severe lacerated wound of the right arm. On the outer side of the arm was a jagged wound, three inches long, extending downwards and inwards towards the elbow-joint. The supinator longus and triceps muscles were divided, and also the musculo-spiral nerve. A small fragment was gouged out of the shaft of the humerus. There

was a small wound on the inside of the arm which connected with the first by a sinus beneath the biceps. There was no loss of sensation in the hand, and both the radial and ulna arteries pulsated at the wrist. Dr. Cheever joined the ends of the divided nerve by two interrupted silk sutures. The arm was placed in a straight position and secured by a splint. Five days after the injury, sensation continued good over the dorsum of the thumb and forefinger.

4. *Necrosis of the Tibia.* — A girl, nine years of age, hurt her leg three months ago, while playing ball. Suppuration soon followed, and has continued to the present time. The dressing had not been changed for *five weeks* previous to her entrance to the hospital. She was extremely weak, emaciated, and nervous, and suffering severely with pain in the leg. She was etherized, the sinuses enlarged, and a sequestrum, three inches long, removed from the shaft of the left tibia. The shaft was very soft and brittle.

Disease of the right hip has become developed since the injury. There is flattening of the nates, tenderness and swelling about the joint, an unnatural fullness in the groin, pain in the hip and knee, distinct grating on rotating the femur, and impaired motion. Extension was applied with great relief to the pain.

5. *Lupus.* — The patient is sixty-one years of age, and is in a poor state of health. She has mitral disease of the heart, and has had several attacks of severe syncope during her stay in the hospital, but she is better of the latter and very anxious for an operation upon the lupus. The disease was first noticed about a year ago, though for some time previously she had been troubled with a nasal discharge. The nose is flattened from ulceration. At the base of the septum and on each ala there is a dry brownish crust, covering several excavated ulcers, and surrounded by a dull-red, swollen border of skin. The discharge from the diseased surface is very slight, and the pain is not severe. Ether was very carefully given to this patient, with entire success. The pulse became firmer and more steady under its use. Dr. Cheever applied the galvano-cautery to the whole of the diseased surface. The wire being heated only to a dull-red heat, not a drop of blood was seen. Cold-water dressing was applied.

6. *Hydrocele of the Cord.* — The cyst was about an inch in diameter and had been noticed but a short time. It was emptied with a needle and ordered to be blistered should it refill. This boy was thought by his parents to have the same disease as his brother, upon whom Dr. Cheever performed Wood's operation for the radical cure of hernia. The operation was performed ten years ago, and may be called successful, as the patient is now sixteen years old and has never had a return of the rupture.

10. *Fibro-Cartilaginous Tumor of Face.* — The patient is a young woman, and the tumor of about a year's duration. It was situated just below the left ear, and dipped down behind the ramus of the lower jaw. It was firm, elastic, and slightly movable. Dr. Thorndike removed the growth through a vertical incision, being obliged to carry the dissection deep in the parotid region. The tumor was fibro-cartilaginous, and about the size of an almond. The hæmorrhage was free, though no large vessel was divided. The wound was closed with sutures.

G. W. Gay, M. D.

SALICYLIC ACID.

MESSRS. EDITORS, — I inclose, with a request for publication, an extract from a letter just received from Professor Schwartz, of the University of Gratz, giving some account of an important communication made to the recent German Scientific Congress at Breslau, and which will interest the readers of the JOURNAL. E. N. HORSFORD.

CAMBRIDGE, *January* 7, 1875.

"In the chemical section, the most important thing was the exhibition of the salicylic acid now produced in large quantities by the process of Kolbe. It is made from $C_{12}H_5O_2$ and NaO, HO (phenol-sodium), into which is conducted dry carbonic acid at a temperature of 170° C. There is formed salicylate of soda, which decomposed by hydrochloric acid precipitates the salicylic acid. This is the best disinfecting agent known. It is without odor, tasteless, not poisonous, and, even in small quantities, absolutely preventing putrefaction. Meat immersed in a solution of salicylic acid, in an open vessel, remained perfectly sweet for weeks. It prevents milk from coagulation. Fruits do not become moldy, and wounds heal without festering. In the case of a patient whose leg was amputated, the wound was sprinkled with a little powdered salicylic acid, and bandaged for six days without being touched; it was then found to be healed over without the slightest formation of pus.

"It is easy to see what enormous significance attaches to this discovery. The transportation of meat, the preservation of bodies, of anatomical and zoölogical preparations, of fish, mollusca, milk, beer, wine, etc., will be greatly promoted. It must be remembered that salicylic acid is perhaps twice as effective as carbolic acid, and that it is wanting in the poisonous and unpleasant qualities which characterize the carbolic acid. Dr. Fr. v. Heyden has erected, at the suggestion of Professor Kolbe, a manufactory of salicylic acid at Dresden, where one may now obtain the acid at ten thalers per kilogramme (about $3.50 per pound)." [1]

[It may be well to add that salicylic acid is a constituent of the oil of wintergreen (the checker-berry, *Gaultheria procumbens*, of New England). Its production from carbolic acid (phenol) on a commercial scale, and so from "dead oil," a familiar product of the distillation of coal tar, is one of the triumphs of modern chemistry. It promises so much in practical surgery, in securing healing by first intention, in the prevention of pyæmia, and in the arrest of the growth of all forms of microscopic animal and vegetable life that characterize fermentation and putrefaction, that opportunity for experiment cannot be too soon opened for all. The article can be imported in small quantities through the mail, and in larger quantities through any of the leading druggists. E. N. H.

[1] Its present price is not far from three dollars per ounce.

WEEKLY BULLETIN OF PREVALENT DISEASES.

THE following is a bulletin of the diseases prevalent in Massachusetts during the week ending January 23, 1875, compiled under the authority of the State Board of Health from the returns of physicians representing all sections of the State: —

In Berkshire: bronchitis, influenza, pneumonia, and rheumatism.

In the Connecticut Valley: bronchitis, pneumonia, rheumatism, croup, and tonsillitis. There is a decided subsidence of diphtheria.

In the Midland section: bronchitis, influenza, rheumatism, pneumonia, and whooping-cough. Measles begins to be reported in this section. Erysipelas and tonsillitis prevail to a limited extent.

In Middlesex and Essex: influenza, pneumonia, scarlatina, bronchitis, rheumatism, whooping-cough, and measles. Tonsillitis and mumps are prevalent in some parts. Scarlatina is reported epidemic in Lawrence.

In Boston and its suburbs: bronchitis, measles, pneumonia, rheumatism, scarlatina, tonsillitis, and whooping-cough. Mumps prevails in certain parts.

In the Southeastern counties: bronchitis, influenza, whooping-cough, rheumatism, pneumonia, and scarlatina. In Taunton, "an epidemic of mumps."

Bronchitis is everywhere prevalent; many physicians report that unusual abdominal symptoms attend these cases. Measles continues in the eastern parts of the State, and is extending. Scarlatina is most prevalent in Boston and the Southeastern counties. Pneumonia and rheumatism prevail in all sections. Small-pox is reported in the Blackstone Valley.

If we compare with the report of last week, we find that influenza, measles, tonsillitis, scarlatina, and mumps have increased in prevalence; while diphtheria, pneumonia, rheumatism, whooping-cough, and typhoid are less prevalent.

F. W. DRAPER, M. D., Registrar.

COMPARATIVE MORTALITY-RATES FOR THE WEEK ENDING JANUARY 16, 1875.

	Estimated Population.	Total Mortality for the Week.	Annual Death-rate per 1000 during Week.
New York	1,040,000	677	34
Philadelphia	775,000	329	22
Brooklyn	450,000	262	30
Boston	350,000	175	26
Providence	100,000	32	17
Worcester	50,000	14	15
Lowell	50,000	15	16
Cambridge	44,000	21	25
Fall River	34,200	16	24
Lawrence	33,000	10	16
Springfield	33,000	5	8
Lynn	28,000	16	30
Salem	26,000	16	32

ERRATUM. — Page 72, second line from the bottom, for 1816 read 1691.